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(21) International application number: PCT/EP99/03141 (22) International filing date: 7 May 1999 (07.05.99) (30) Data relating to the priority: 198 20 608.9 8 May 1998 (08.05.98) DE (71) Applicant (for all designated States except US): HOECHST SCHERING AGREVO GMBH [DE/DE]; Mirastrasse 54, D-13509 Berlin (DE). (72) Inventors; and (75) Inventors/Applicants (US only): LÖRZ, Horst [DE/DE]; Ramckeweg 6a, D-22589 Hamburg (DE). LÜTTICKE, Stephanie [DE/DE]; Lange Reihe 22, D-20099 Hamburg (DE). ABEL, Gernot [DE/DE]; Papendamm 28, D-20146 Hamburg (DE). GENSCHEL, Ulrich [DE/DE]; Eimsbütteler Strasse 100b, D-22769 Hamburg (DE).	(81) Designated states: AE, AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, US, UZ, VN, YU, ZA, ARIPO Patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without the International Search Report and to be republished once the report has been received.</i>	

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(54) Title: NUCLEIC ACID MOLECULES WHICH CODE FOR ENZYMES DERIVED FROM WHEAT AND WHICH ARE INVOLVED IN THE SYNTHESIS OF STARCH

(54) Bezeichnung: NUCLEINSÄUREMOLEKÜLE CODIEREND ENZYME AUS WEIZEN, DIE AN DER STÄRKESYNTHESE BETEILIGT SIND

(57) Abstract

The invention relates to nucleic acid molecules which code for enzymes and which are involved in the synthesis of starch in plants. These enzymes concern isoamylases derived from wheat. The invention also relates to vectors and host cells which contain the described nucleic acid molecules, especially transformed plant cells and plants which can be regenerated therefrom, which exhibit an increased or reduced activity of the inventive isoamylases.

(57) Zusammenfassung

Es werden Nucleinsäuremoleküle beschrieben, die Enzyme codieren, die an der Stärkesynthese in Pflanzen beteiligt sind. Bei diesen Enzymen handelt es sich um Isoamylasen aus Weizen. Weiterhin betrifft die Erfindung Vektoren und Wirtszellen, die die beschriebenen Nucleinsäuremoleküle enthalten, insbesondere transformierte Pflanzenzellen und aus diesen regenerierbare Pflanzen, die eine gesteigerte oder verringerte Aktivität der erfindungsgemäßen Isoamylasen aufweisen.